

Micrurus annellatus annellatus (Peters, 1871) (Serpentes: Elapidae): Distribution extension in the state of Acre, northern Brazil

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ABSTRACT: The annellated coral snake *Micrurus annellatus* (Peters, 1871) occurs from southern Ecuador and southeastern Colombia to southeastern Peru and north of Bolivia. Only *Micrurus a. bolivianus* has been recorded in Brazil, in the state of Amazonas. Herein we provide two records of *Micrurus a. annellatus* from Brazil in the state of Acre.

The annellated coral snake *Micrurus annellatus* (Peters, 1871) occurs from south of Ecuador and southeastern Colombia through Peru to Bolivia including an isolated, questionable record from Amazonas in Brazil (Roze 1996; Campbell and Lamar 2004). The most distinctive characteristic of this species is the relatively short parietal ring that traverses the temporals, the posterior 2-3 supralabials and infralabials, and the anterior end of the posterior chinshields (Schmidt 1954; Roze 1996; Campbell and Lamar 2004). Recently, this species was also recorded in the state of Acre in Brazil by Silva *et al.* (2010), but without subspecific identification.

Three subspecies of *Micrurus annellatus* are currently recognized (Roze 1967; 1996; Campbell and Lamar 2004): *M. a. annellatus* (Peters, 1871), characterized by a relatively high number of black body rings (34 to 83 rings), two postoculars, and a short parietal ring, occurs from southern Ecuador and southeastern Colombia to southeastern Peru and north of Bolivia; *M. a. balzani* (Boulenger, 1898), characterized by having one rather than two postoculars and distinctive red body rings, is found on the Amazonian slopes of the Andes in the Madre de Dios region of Peru and in western Bolivia; and *M. a. bolivianus* (Roze, 1967), characterized by having a relatively low number of black body rings (20 to 25) and a white parietal ring, inhabits the eastern Andes and upper Amazonian valleys of Central Bolivia and an isolated record from Amazonas (Brazil) (Campbell and Lamar 2004). In the Amazonas (Brazil), this last subspecies was recorded by Hoge and Romano (1969) along the Aripuanã river. *Micrurus annellatus montanus* described by Schmidt (1954) has been considered by some authors to be a synonym of *M. a. annellatus* (see Roze 1996; Campbell and Lamar 2004). *Micrurus annellatus* is considered a confusing species that needs revision and some reports from Colombia and Peru may be based on an undescribed species (Campbell and Lamar 2004). Herein we present two records of *Micrurus a. annellatus* from

Brazil in the state of Acre.

On 24 November 1996 one individual of *Micrurus annellatus annellatus* (Figure 1; Voucher specimen UFAC 289) was collected in the Serra do Divisor National Park (Rio Azul, Colocação Juazeiro; 07°33' S, 73°16' W, Datum = WGS84, 230 m elevation; Figure 2), located in the northwest of state of Acre, in Upper Juruá region, Amazonia, Brazil. The specimen (total length = 473 mm; male) was found moving on the leaf litter at night (20:15 h) in primary forest. On 10 January 2012 another specimen (Figure 3; UFACF 4081; total length = 385 mm; female) was collected by local inhabitants in forest (agroforestry system) in the Extractive Reserve Chico Mendes in the municipality



FIGURE 1. Preserved specimen of *Micrurus annellatus annellatus* (male UFAC 289; SVL = 400 mm, tail length = 73 mm) from Parque Nacional da Serra do Divisor, state of Acre, Brazil. Photo by Moisés B. de Souza.

of Brasília, southwest of state of Acre, Brazil (10°45' S, 69°18' W, Datum = WGS 84, 280 m elevation; Figure 2). Both individuals agree with the features presented in Roze (1996) and Campbell and Lamar (2004). Characteristic features are: UFAC 289 - 6/6 supralabials, 7/7 infralabials, two postoculars, 1 + 1 temporals, 15/15/15 dorsal scale rows, 204 ventrals, anal plate divided, subcaudals 50, the black rings on the body are 62 and 10 on the tail; UFACF 4081 - 6/6 supralabials, 7/7 infralabials, two postoculars, 1 + 1 temporals, 15/15/15 dorsal scale rows,

209 ventrals, anal plate divided, subcaudals 31, the black rings on the body are 50 and 5 on the tail. The record in the Serra do Divisor National Park extends the subspecies distribution of approximately 60 km (airline) to the east of the Peru-Brazil border (Schmidt 1954; See map 7, page 148 in Campbell and Lamar 2004). The specimens were deposited in the herpetological collections of the Federal University of Acre - Campus of Rio Branco (UFAC 289) and of the Federal University of Acre - Campus of Cruzeiro do Sul (UFACF 4081).

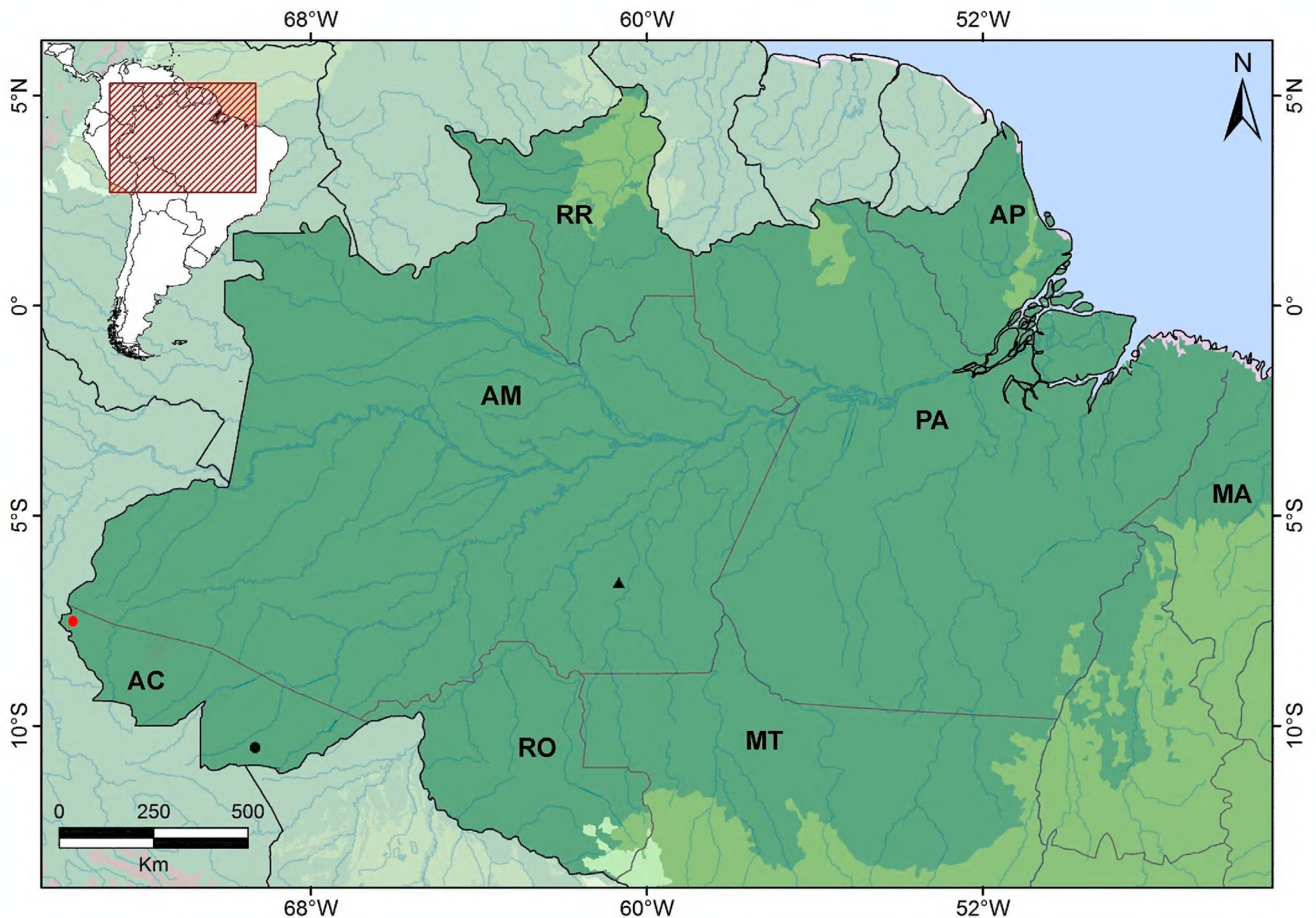


FIGURE 2. Distribution of *Micrurus annellatus* in Brazilian Amazonia. The black triangle indicates the previous known locality of *M. a. bolivianus* in the state of Amazonas (Hoge and Romano 1969), the red circle indicates the new record of *M. a. annellatus* in the Serra do Divisor National Park (UFAC 289), and the black circle indicates the new record in the Extractive Reserve Chico Mendes (UFACF 4081), both in the state of Acre.



FIGURE 3. Preserved specimen of *Micrurus annellatus annellatus* (female UFACF 4081; SVL = 350 mm, tail length = 35 mm) from Extractive Reserve Chico Mendes, state of Acre, Brazil. Photo by Marco A. de Freitas.

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LITERATURE CITED

- Campbell, J.A. and W.W. Lamar. 2004. *The Venomous Reptiles of the Western Hemisphere*. 2 Volumes. Ithaca: Cornell University Press. 898 p.
- Hoge, A.R. and S.A. Romano. 1969. Espécies registradas para o Brasil (Serpentes). *Ciência e Cultura* 21(2): 454.
- Roze, J.A. 1967. A check list of the New World venomous coral snakes (Elapidae), with descriptions of new forms. *American Museum Novitates* 2287: 1-60.
- Roze, J.A. 1996. *Coral Snakes of the Americas: Biology, identification, and venoms*. Malabar; Florida, U.S.A.: Krieger Publishing Company. 328 p.
- Schmidt, K.P. 1954. The annellated coral snake. *Fieldiana Zoology* 34: 319-325.
- Silva, M.V., M.B. Souza and P.S. Bernarde. 2010. Riqueza e dieta de serpentes do estado do Acre, Brasil. *Revista Brasileira de Zoociências* 12(2): 165-176.

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